Enhanced Grenade Launcher Module (EGLM)

Annex to

USSOCOM (SORR) Memo, Revised Special Operations Peculiar Modification (SOPMOD) Kit for the M4A1 Carbine, dated 29 October 1999, with ORD Revision 5

Increment: One (1)

ACAT: III

Requirements Authority: USSOCOM SOOP-RV

Approval Authority: USSOCOM PEO-SP

Milestone Decision Authority: USSOCOM PEO-SP

Designation: To Be Determined

(Date)

Table of Contents:

Tables

Appendixes

References

A. USSOCOM Memo, subj: Special Operations Peculiar Modification (SOPMOD) Kit for the M4A1 Carbine, dated 15 September 1993, with approved ORD
B. USSOCOM (SORR) Memo, Revised Special Operations Peculiar Modification (SOPMOD) Kit for the M4A1 Carbine, dated 29 October 1999, with ORD Revision 5
C. CJCSI 3170.01C, Requirements Generation System, Current Edition

FOREWORD

USSOCOM initially validated the requirement for "modular quick-attach grenade launchers" on 15 September 1993 in the original Operational Requirements Document (ORD) for Special Operations Peculiar Modification (SOPMOD) Kit for the M4 Carbine (Ref A, para 4). Ref A was updated several times in the 1990's, culminating in ORD Amendment #5, of 29 October 1999 (Ref B, attached to this Annex as Appendix A).

The SOPMOD Kit consists of multiple sub-systems. Considering that the Ref B is too vague for adequate description of requirements, and that ORD updates are no longer practical, current USSOCOM policy is that Combat Developers will supplement Ref B by an individual ORD annexes for each SOPMOD subsystem. This document is the ORD Annex for the subject EGLM. It complies with current CJCS requirements guidance (Ref C) and is therefore formatted as a Capabilities Development Document (CDD). EGLM has no earlier Initial Capabilities Document (ICD) rather it is founded on Ref B as well as Congressionally-directed and USSOCOM-directed research activities that have been underway in the SOPMOD program since FY00.

1. Capability Discussion. The Enhanced Grenade Launcher Module (EGLM) will provide the Special Operator with first round effect on tactical targets under most battlefield conditions out to the maximum range of the ammunition available.

The M203 Grenade Launcher, and to a lesser extent, the M79 Grenade Launcher are currently used by Joint Special Operations Forces (SOF). SOF requires a single standardized, versatile grenade-launching weapon to cover defensive and offensive operations in SOF mission scenarios. The EGLM must bring effective fire on point and area enemy targets, day and night, to the maximum range capable for current and future 40mm munitions.

Tactical operations with grenade launchers include capability requirements for both short and long-range fires. The missions that the EGLM must support include short-range firing in Close Quarter Combat (CQB), which involves Counter-terrorism (CT), Counter-narcotics (CN), and Military Operations in Urban Terrain (MOUT). SOF also requires long-range grenade launcher fires in Special Reconnaissance (SR), Strike Operations (SO), and Foreign Internal Defense (FID). The EGLM will provide an increased capability to be tailored to these SOF mission scenarios. This tailoring will increase the weapon's lethality through fire control and target acquisition day and night both during CQB and to ranges of 400 meters, the maximum effective range of the current 40mm munitions, and will have an open architecture to permit greater ranges as future munitions technologies mature.

The current M203 Grenade Launcher and M79 Grenade Launcher system shortfalls include: (1) Use of a leaf sight that is ineffective at night and limited to a 250-meter sight picture. (2) The M203 fire control system, theAN/PSQ-18, is currently in limited use with the M203E1. The AN/PSQ-18 is bulky, front heavy, does not provide a ranging capability. It was fielded in limited quantities for Enduring Freedom and Iraqi Freedom,

as an urgent bridge day-night capability anticipating the EGLM. (3) The M79 has no fire control system. (4) Current depot level maintenance procedures for the M203 are frequently needed, since the wepon has a short system life. Maintenance of the M79 includes cannibalizing spares to maintain operational M79 weapons. (5) The M203 is unable to accept longer, more effective NATO munitions. (6) The M203 mounting system is secured to the host weapon by attaching the mounts to the rifle or carbine barrel, degrading the host weapon accuracy. (7) The M203 is unreliable in over-the-beach environments, due to corrosion from salt exposure, and failures to fire from infiltration of sand and silt into the firing mechanism. (8) The M203 is difficult to load and fire in the prone fighting position. (9) The M203 and M79 are "Spiral Development" unfriendly. They have closed system architectures, restricting current and future technology upgrades.

Special Operating Forces (SOF) requires a versatile replacement for the Vietnam-era M203 and M79 Grenade Launchers and associated ammunition. The EGLM shall have an open mounting architecture, providing interoperability with the M4/M16 Series, the SOF Combat Assault Rifle (SCAR), and other small arms. The EGLM shall provide an improved fire control system that increases targeting, accuracy, and lethality performance. The EGLM will provide the user with a fire control capability allowing the user to range and target in day and night environments. A separate butt-stock accessory shall provide the capability to use the EGLM in a stand-alone configuration.

a. Operating Environments: The EGLM shall operate in conditions normally encountered by land forces and the U.S. Navy SEALs to include: desert, artic, jungle, and over the beach environments. These environments include Military Free Fall and diving infiltration operations. In addition, SOF Forces must be able to use the EGLM in a Military Operations Urban Terrain (MOUT) environment.

b. There are no JCIDS documents pertaining to the EGLM system. The EGLM system capability, that of is currently validated and documented in Enclosure A.

2. Threat. The EGLM is designed to address failings and enhance reliability over the current M79 and M203 Grenade Launchers. The EGLM will be employed throughout the entire spectrum of conflict and will experience the same threats as those of the SOF Soldier. The most likely environment in which personnel will operate will be Small-Scale Contingencies (SSC) and Stability and Support Operations (SASO). The primary threat to the SOF Soldier in these operations will be the dismounted soldier equipped with small arms systems. Operations will be carried out in all types of terrain, with urban operations providing the most likely scenario for close combat. These threats are addressed in NGIC-1572-0055-02, "Future Threat to U.S. Special Operation Forces (SOF) Ground Personnel (U)", 8 June 2002.

3. Program Summary. EGLM is in its third year of development as a subsystem project of SOPMOD. At the request of a Joint SOF Requirements Working Group (RWG) a Vendor Technology Demonstration of Grenade Launchers was conducted at Naval Surface Warfare center (NSWC) Crane in September of 2000. Nine vendors

demonstrated their grenade launchers to 32 Army, Navy and Air Force combatant operators in an RWG round-robin assessment. Three new grenade launchers were found superior to the M79/M203. The demonstration generated industry and command interest, leading to an un-requested Congressional RDT&E Plus-up in September of 2000. This Plus-up of $873K for Enhanced Grenade Launcher Module research arrived at NSWC Crane for execution in FY01. EGLM has continuing support by Congress and USSOCOM component commands. This acquisition effort utilizes a Best Value approach. Offers will be evaluated to determine compliance with the Performance Specification as set forth in the solicitation. The offers will also be evaluated to determine if the proposals/product samples exceed the stated threshold requirements and whether or not those excesses are beneficial to the Government. Source Selection will be conducted in accordance with the Kaminski contracting method. Indefinite-Delivery Indefinite-Quantity (IDIQ) contracts will be awarded to selected vendors.
The EGLM project consists of four (4) distinct increments. These increments are necessary to allow development of emerging technologies, enabling evolutionary architecture to fully mature. The fourth increment will provide the final solution. Each increment is designed to increase the capability of the warfighter by fielding sequential partial solutions when authorized by a favorable Milestone C decision. The EGLM developmental increments are as follows:

a. Increment One will consist of a new 40 MM grenade launcher with a modular fire control sub-system that provides ranging capabilities. The grenade launcher will replace the aging M203 and the M79 currently fielded.

b. Increment Two envisions upgrade to fire control capability that may have not been achieved in increment one. Such upgrades may include:

(1) Integration of aiming and ranging technologies

(2) An automatic adjusting aiming point

(3) Incorporation of programming pathways for future programmable 40mm ammunition

(4) Integration of multiple ballistic programming solutions for various U.S. ammunition

(5) Shot counter

c. Increment Three Introduces Enhanced Indirect Fire Munitions (EIFM) involving 40mm munitions and fusing development. Increment three will call for development of four 40mm rounds with the following capabilities:

(1) Selectable air bursting, point detonating, and delay (HEDP-TM) capability in a single round of ammunition.

(2) Break Contact and other close-range applications.

(3) Over Pressure / MOUT capability, providing enhanced lethality in enclosed spaces

(4) Infrared illumination that provides illumination in a wavelength favorable to our future generations of night vision technology, but unfavorable to threat night vision systems.

d. Increment Four shall entail final system integration, fully unifying improvements of previous increments, including new developments, such as:

(1) Technology insertion of higher velocity/longer-range rounds

(2) Analysis, computation, and insertion of total ballistic solution of various types of 40mm munitions, to include foreign/allied rounds.

4. System Capabilities Required for the Current Increment.

a. The EGLM is a single shot, 40mm hand-held launcher module that can be attached to the MIL-STD-1913 dimensioning rail interface on host weapons. The EGLM shall consist of three primary components: a weapon (with a fire control system), a stock assembly, and a mounting system that supports open architecture. The EGLM mounting system will accommodate current and future SOPMOD accessories that support the host weapon mission. The EGLM fires standard 40mm x 46mm munitions along with special Low Velocity (LV) munitions. The EGLM also detaches from the host weapon to attach to an EGLM stock assembly to accommodate stand-alone operations. The EGLM stock assembly shall provide multiple positions to accommodate comfortable firing configurations for users of various arm lengths. The EGLM shall provide the operator with improved combat lethality and other capabilities, when compared to the current M79 and the M203 with the AN/PSQ-18 Grenade Launcher Day/Night Sight Mount. Among the improved capabilities sought in the EGLM are the abilities to range and engage targets with an increased hit probability from the prone, kneeling, sitting, and standing positions (supported and unsupported).

b. The EGLM will possess the following Key Performance Parameters and Additional Performance Attributes.

(1) Key Performance Parameters**.**

(a) The EGLM System consists of three primary components [KPP]:

(b) EGLM weapon, which includes a Day/Night range-finding and aiming capability. (Threshold - T) Threshold =Objective (T=O)

(c) EGLM stock assembly for stand alone mode (T=O)

(d) EGLM M4A1 Interface (T), based on open architecture, and adaptable to future interfaces.

NOTE: Interfaces: The EGLM shall interface with the M4A1 carbine utilizing the MIL-STD-1913 dimensioning system as a baseline. EGLM will utilize other supplemental interface surfaces or mechanisms as required to maintain an open architecture for the SOPMOD system. The Program Manager will establish or acquire Interface Control Documents (ICD), to include level III drawings to permit unrestricted future spiral developments.

(e) The EGLM weapon shall be a single shot weapon to reduce system weight and complexity. It will be a hand held launcher module manual feed with a side breaking breech, that can be attached to a M4A1 interface (T). Attached to the SCAR and other SOF weapons (O).

(f) Operators shall fire the EGLM in two configurations (1) EGLM coupled to the M4A1 Carbine and (2) the EGLM in the stand-alone mode (T). From the SCAR (T) and other SOF weapons (O).

(g) The EGLM shall fire the current family of U.S. munitions to include: Training, High Explosive, Illumination, and Non Lethal (T), future High Explosive Dual Purpose-Triple Mode (HEDP-TM) (O).

(h) The EGLM fire control shall:

1. Provide for a method of target ranging that allows operators to accurately measure range out to 400 m within +/- 5m (T), +/- 3 m (O)

2. Allow the operator to engage targets in daylight and darkness, 2nd round, 25% increase from the baseline on target 50-300m (T); 1st round, 90% increase from the baseline on target 50-400m (O)

3. Incorporate a secondary sight in the event the primary sight becomes inoperable or separated from the weapon, and to provide emergency rapid aiming capability during the assault phase of operations (T=O).

(i) Safety: The EGLM shall not pose a safety hazard to the operator or nearby personnel during handling, transport, storage or use.

1. The EGLM shall incorporate a manual safety lever with an integrated safe/fire switch with positive stops (T=O).

2. The EGLM shall include engraved, etched, raised, or stamped “S” (for safe) and “F” (for fire) markings on the weapon housing. The “S” shall be marked in an indelible white color and the “F” letter marked in indelible red (T=O).

(2) Additional Performance Attributes.

(a) Amphibious Operations. The EGLM should function in an amphibious environment with minimum preparation, and must undergo immersion testing at 20.1 meters of depth (66 feet) for 2 hours (T). Immersion test at 99 feet for 2 hours (O). The EGLM shall function in amphibious operations when troops are moving from the beach/surf zone onto land.

(b) Airborne Operations. Operators will be capable of operating the EGLM following static line and military free fall insertions (T=O).

(c) Over-the-Beach (OTB). The EGLM shall operate when flooded with salt water-sand slurry at an angle of 30-degree inclination when the crown of the muzzle is at or immediately beneath the surface of the water. The EGLM will have a safe drain time/drain procedure that operators can execute in less than 3 seconds.

(d) Urban Condition. The EGLM shall function effectively in Military Operations Urban Terrain (MOUT) combat settings. The EGLM shall allow soldiers to engage the enemy at street level, on rooftops and behind fence lines.

(e) Set-Up, Assembly and Disassembly. The EGLM shall allow 5 to 95% of trained operators to assemble or disassemble the EGLM to the host weapon or Stock Assembly in the time periods outlined in Table 1, with a minimum of two hours training and without the use of special tools (T=O).

Table 1. Assembly and Disassembly Times

Condition	Assembly/Disassembly Times	
	Day	Unaided at Night
Without Gloves	30 sec.	45 sec.
Mittens	45 sec.	60 sec
Winter Gloves	60 sec.	90 sec
MOPP 4 Gear	60 sec.	90 sec

(f) Operator Firing Positions, Conditions and Equipment. The EGLM design shall permit the operator full operational capability from the prone, kneeling, sitting, and standing positions. The EGLM design shall allow operators the ability to operate the weapon with winter gloves, body armaments, and Nuclear, Biological and Chemical (NBC) gear (T=O).

(g) Infantry Targets. The EGLM system shall allow operators to fire projectiles that are capable of engaging infantry targets at unknown ranges between 28-300 meters (T). Hit infantry target at unknown ranges between 28-400 meters (O). A hit is defined as a projectile landing within 5 meters of a designated point target.

(h) Vehicle/Bunker Targets. The EGLM shall allow operators to fire projectiles that are capable of engaging vehicle targets at unknown ranges to 300 meters (T) and 400 meters (O). A hit is defined as a projectile landing within 5 meters of a designated target (20'L X 8'W X 5'H).

(i) The EGLM shall reduce the minimum time to accurately engage a target set when compared to the M203 baseline.

(j) Host Weapon Interface. The EGLM, when mounted on the M4A1 shall not interfere with magazine loading by the operator. The EGLM shall not interfere with normal operation of the M4A1, in any configuration and shall not degrade accuracy or dispersion by more than 0.5 mils at 25 meters (T). SCAR and other weapons (O).

(k) When measured against the baseline, the EGLM shall improve the overall probability of hit on both infantry and vehicle targets in a simulated operational test environment.

(l) Weapon Trigger. The EGLM weapon shall have a double action trigger that allows both accurate firing and the ability to re-strike the primer without opening the breech, under conditions of extreme fouling or other interference with the firing pin (T=O).

(m) Cartridge Ejection. The EGLM shall partially eject spent cartridge casings under extreme operating and environmental conditions, and retain unexpended (live) cartridges, when breech is opened. EGLM shall allow for manual extraction of the cartridge as an emergency extraction feature, should the mechanical extraction fail (T=O).

(n) Breech Lock. The EGLM shall incorporate a Breech Lock that will not allow inadvertent opening of the breech under any condition. The breech shall open unassisted by the operator when the Breech Lock release is depressed. The Breech Lock shall be ambidextrous for left and right-handed shooters to operate with their index finger (T=O).

(o) Pistol Grip. A removable pistol grip is desired on the EGLM receiver (T=O).

(p) EGLM Bore Sight Retention. When set, the EGLM should retain bore sight for 100 rounds fired (T=O).

(q) Night Vision Devices Compatibility. The EGLM shall function effectively when operators use goggles or helmet mounted clip-on devices (T=O).

(r) EGLM System Spill Light. The EGLM should minimize the visible spill light signature observed, within 50 meters during limited visibility conditions (T) 20 meters (O).

(s) EGLM Butt Stock Features. The EGLM stock assembly shall provide multiple settings (or set-ups) adjusting the distance between the shoulder-rest and trigger for 5 to 95% of operators (T=O).

(t) Ambidextrous Operations. The EGLM shall accommodate both left and right hand operators (T=O).

(u) Operator Controls and Tactile Features. Knobs, levers, and detents should have tactile surfaces designed for easy gripping to include a means for the operator to feel adjustments. The knobs and adjusters will also keep the settings i.e. Class C type detent (T=O).

(v) EGLM Component Weight. Table 2 refers (T=O).

Table 2. EGLM Weight Table

EGLM Component	Maximum Weight Threshold	Minimum Weight Objective
Stock Assembly	3.5 lbs.	1.0 lbs.
Weapon and Fire Control	6.5 lbs.	2.0 lbs.
M4A1 Interface	3.0 lbs	1.0 lbs.
EGLM Weight Added to M4	9.5 lbs	3.0 lbs.
EGLM Stand Alone Weight	10.0 lbs.	4.0 lbs.

(w) Finish. The EGLM should have a dull, non-reflective Taupe exterior finish (T=O). Exact shade will be determined prior to full rate production.

(x) EGLM Reliability and Maintenance. Table 3 refers.

Table 3. EGLM Reliability and Maintenance Requirements

EGLM	Threshold	Objective
Mean Rounds Between Failure (MRBF)	1500	5000
Mean Rounds Between Stoppage (MRBS)	200	500
Mean Time To Failure (MTTF) (EGLM Fire Control)	1000 hrs.	4800 hrs.
Mean Time to Repair (Unit Level)		
Maintenance (preventive/cyclic)	<10 min.	
Repair (Unit Level)	$\leq$ 0.5 hrs	
Repair (Direct Support)	< 1 hrs.	

NOTE: The time to repair is defined, as the total time required restoring the EGLM and mounts to operation, including diagnostic time.

(y) Receiver Service Life. The EGLM receiver and barrel shall demonstrate a service life exceeding 5,000 rounds (T=O)

(z) Battery Life. If batteries are used, the EGLM shall function for at least 100 hours of continuous operation "on time." (T=O)

(aa) Low Power Feature. If batteries are used, a low power (power) indicator is desired (T=O).

(bb) The EGLM/M4A1 Interface. The EGLM shall mount securely to the M4A1 and be free floating from the barrel. The operator shall require no special tools mount the EGLM to the M4A1.

(cc) The EGLM shall function with current SOPMOD Block 1 accessories using the MIL-STD-1913 rails while attached to the host weapon or in the stand-alone mode. It shall have open architecture permitting insertion of future SOPMOD subsystems.

(dd) Weapon Operation. The EGLM, when mounted on the M4A1, shall not interfere with ejection/loading of the 5.56 magazine, function of the iron sight or eyesight alignment of the operator and M4A1.

(ee) Maintenance Modularity. The EGLM weapon design shall allow for modular swap out of the fire control unit at the first or second maintenance echelon.

(ff) Butt Stocks. Butt Stock designs should minimize the "felt recoil" to the operator. The EGLM may include an accessory to use an alternate butt-stock in lieu of the standard M4 butt stock.

(gg) Power Supplies/Batteries. Subsystems requiring batteries shall provide batteries that are common and commercially available. The operator shall be able to replace the batteries using one hand, without tools, and without removing the sub-system from the host weapon. The battery lid shall have a lanyard or other loss-prevention mechanism connected to the sub-system body.

c. Tables 4 and 5 provide a Summary of Key Performance Parameters and Additional Performance Attributes for the desired EGLM.

Table 4 Key Performance Parameter (KPP) Summary

Key Performance Parameter	Threshold	Objective
Round On Target Day and Night	25% increase	90% increase
Side Breaking Configuration	Yes	Yes
Stand Alone Weapon System	Yes	Yes
Attach to Ridged 6:00 Position on M4A1	Yes	SCAR
Manual Safety Lever	Yes	Yes
Back Up Sight	Yes	Yes
Fire Control		
Day and Night Capable	Yes	Yes

NVD Compatible	Yes	Yes
Target Ranging and Adjustment	400 m +/-5 m	400 m +/- 5 m
Probability of Hit		
Reduced Time To Kill vs. M203 on M4A1	25% Minimum Reduction	25% Minimum Reduction
Operational Capability	Prone, Kneeling & Standing Positions	
Ammunition Compatibility	All Current 40mm	

Table 5 Additional Performance Attributes (APA) Summary

Additional Performance Attributes	Threshold	Objective
Fire Control Ergonomics		
Ambidextrous Sighting	N/A	Yes
Target Range Indicators	N/A	Yes
Field of View	N/A	Un-obscured
Good Eye Relief (Infinite vs Restricted)	N/A	Yes
Minimum Distortion	N/A	Yes
Ammunition Loading & Ejection		
Loading	Feeding of Weapon from Standing, Kneeling & Prone Position	
Ejection	Assisted Ejection / Simplified Extraction	
Ambidextrous	Yes	
Camouflage & Stealth		
Flat Dark Earth	Yes	
Spill Light Radiation (Visual or IR)	< 50 meters visibility	< 20 meters visibility
Fire Control Optics	Anti-reflective / Glint Reducing Coatings	
Weapon Characteristics		
Compatibility	All SOPMOD Accessories	
Pistol Grip	Yes	
Extreme Environments Capable	Yes	
Winter & MOPP Glove Friendly	Yes	
Batteries (Currently Available)	100 Hrs. (Continuous Use)	> 100 Hrs. (Continuous Use)
Weight	M203 Comparable +1.5 - 3lbs. For Fire Control	
Size	Compact	
Reliability & Durability		
Mean Round Between Stoppage	>200 Rds	> 500 Rds.
Mean Rounds Between Failure	1,500 Rds.	5,000 Rds.
Mean Time to Failure	>1,000 Hrs.	>4,800 Hrs.
Receiver Service Life	5,000 Rds.	
Shot Counter	Yes	
MIL-STD-1913 Interface	On Top of EGLM Allowing 180 Degree Position on SOPMOD Rail	

5. Capstone Requirements Document Interface(s). Not Applicable. Capstone firepower capabilities may emerge with the future restructuring of the SOPMOD Program.

6. C4I Supportability. The EGLM will be integrated into the command structure in the same manner as current SOF weapons. No unique data, intelligence, or communication requirements have been identified

7. Related, Supporting and Supported Systems/Programs. EGLM is interrelated to several other programs. EGLM is currently dependent on parent-service 40mm ammunition programs. EGLM is financial supported by the SOPMOD Program and will remain so, unless formal program separation and new funding lines are established. EGLM is operationally and functionally related to the Army M4A1 Carbine and Modular Weapon System, as well as the USSOCOM SOPMOD Block 1 Program, until the end of

system life for those programs in SOF. EGLM is forward supporting of the USSOCOM SCAR Program and future accessory programs outgrowing from SOPMOD and SOF Weapons.

8. Logistics and Facilities Considerations. The ILS package for the EGLM shall provide an operator's manual and armorer's manual with the First Unit Equipped (FUE).

9. Electromagnetic Environmental Effects (E3) and Spectrum Supportability. Not Applicable.

10. Force Structure and Quantities. Table 6 refers.

Table 6. Basis of Issue Plan

Component/Unit	Quantity
USASOC	
7 SFG (A) 121 ea.	867
Det K	3
Ranger Regiment	444
96th Civil Affairs	30
JFKSWCS	68
SOAR	47
Total	1458
NAVSPECWARCOM	
DEVGRU	600
LOGSU ONE	768
LOGSU TWO	768
SDVT-1	100
SDVT-2	100
NSWU (5 units x 7 kits)	140
NAVSPECWARCEN	64
SBT (3 teams x 25 kits)	300
Total	2840
AFSOC	
Security Forces	31
Combat Weather	0
Special Tactics	123
Total	154
Total Fielding	4452
Program Office	
Spares and Float Stocks	445
Joint Operational Stocks	489
TOTAL	5386

11. Schedule and IOC/FOC Definitions.

a. Initial Operational Capability (IOC). EGLM IOC will be accomplished when 25% of SOF units have replaced their M203 weapons.

b. Full Operational Capability (FOC). EGLM FOC shall be achieved when 100% of Active and Reserve SOF units are fielded.

c. Schedule.

Sub-Program Start	FY00
ORD Annex	FY03
DT/OT Testing	FY04
CPD Milestone C	FY05
FUE	FY05
IOC	FY05
FOC	FY09

12. Other DOTLPF Considerations.

a. Doctrine. New tactical doctrine that incorporates advantages gained in capability over existing systems will be developed in the form of an operator's manual for Increment 1.

b. Organization. No organizational changes are required to SOF commands, units, or tactical formations. No additional manpower or increases to force structure will be required for the EGLM.

c. Training. The United States Army John F. Kennedy Special Warfare Center and School (USAJFKSWCS) will develop institutional training and Collective Training Plans (CTP) for the EGLM. The EGLM will also be included in the curriculum of US Navy Small Arms Operator-Level Operational and Maintenance Course at NSWC Crane, IN.

d. Material. EGLM will not necessitate any other material programs, but may eventually include increments of additional material solutions as described above.

e. Leadership & Education. EGLM operator's manuals will be offered to the component commands for inclusion in professional development courses. There are no other leadership and education impacts other than those discussed in "Training" above.

f. Personnel. No change.

g. Facilities. No significant change. The EGLM will not necessitate any other facilities requirements, unless final configuration is incompatible with security racks in arms rooms that will exist at the time of the fielding. These if this occurs, local commands and installations may adapt the arms room racks using low-cost local contracting.

13. Other Systems Characteristics. The EGLM will avoid design, cost, and risk factors that less important to SOF. EGLM Increment 1 will not require hardening against electronic attack or initial nuclear effects. EGLM Increment 1 will accept degraded performance in heavy dust, fog, and snow. EGLM will, however, be capable of sustained operations in chemical and biological environments. EGLM will meet the requirements for safe transport and deployment by land, sea, and air. The EGLM shall meet applicable safety and health requirements for military standardized equipment. EGLM will be a Category II security item, requiring serialized registry control and other safeguards for small arms.

14. Program Affordability. The EGLM program is affordable under current funding profiles. The EGLM is currently funded under the M4MOD Program (SOPMOD), OSD Program Element Number 1160404BB, Project SAW-LI. Element of Cost M4MOD.CP is for EGLM research. EGLM Procurement is also shared out from the M4MOD budget Element of Cost M4MOD.SOFKITS. While EGLM is affordable as such, it is resourced constrained to the point that FOC could be accelerated by up to three years with a more robust funding profile. For this reason, it may be considered for a separate program element and eventually, separate program management from the SOPMOD parent program, in order to allow EGLM to compete for resources independently.

EGLM unit procurement costs should not exceed $3700 (O), $4,500 (T) each in FY03 dollars. Appendix B provides a detailed Life Cycle Cost Estimate (LCCE).